

Notice of Allowability

Application No.

10/748,390

Examiner

Nelson Yang

Applicant(s)

CHAN ET AL.

Art Unit

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the response entered November 11, 2006.
2. ☒ The allowed claim(s) is/are 27-40, renumbered claims 1-14.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 6/1/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jonathan Bockman on December 4, 2006.

2. The application has been amended as follows:

Claims 1-26 and 41-46 have been canceled without prejudice

Please replace claim 27 with the following:

27. A method of detecting the presence of a protein-containing analyte in a biological sample, comprising:

- a) contacting the sample under conditions effective to allow specific binding of a protein-containing analyte therein to at least one first probe coupled to a nanoporous biological sensor comprising: a nanoporous silicon structure comprising a central layer interposed between upper and lower layers, each of the upper and lower layers including strata of alternating porosity; at least one first probe coupled to the porous semiconductor structure, the binding forming one or more bound complexes;
- b) contacting the bound complexes with a Raman-active probe that binds to the complexes;
- c) covering the bound complexes with a thin layer of silver or gold nanoparticles;

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d) illuminating the sensor so as to cause fluorescent emissions from the bound complexes, the emissions generating SERS signals from the bound complexes; and
e) detecting SERS spectra produced by the SERS signals; wherein a SERS spectrum associated with a bound protein-containing analyte indicates presence of the protein-containing analyte in the sample.

Please replace claim 32 with the following:

32. The method of claim 27 or 30, wherein the SERS signal is generated over a spectral range.

Please replace claim 40 with the following:

40. The method of claim 27, wherein the Raman active probe is selected from adenine, 4-aminopyrazolo(3,4-d)pyrimidine, 2-fluoroadenine, N6-benzoyladenine, kinetin, dimethyl-allyl-aminoadenine, zeatin, bromo-adenine, 8-aza-adenine, 8-azaguanine, 6-mercaptopurine, 4-amino-6-mercaptopyrazolo(3,4-d)pyrimidine, 8-mercaptoadenine, or 9-amino-acridine.

3. The following is an examiner's statement of reasons for allowance: While the prior art teaches the addition of a layer of silver or gold nanoparticles prior to contacting the sensor with a sample, the prior art does not teach the step of covering the bound complexes with a thin layer of silver or gold nanoparticles after the sample has been contacted to the sensor and binding has occurred between the protein analyte and the probe. Furthermore, no motivation could be found to add a layer of silver or gold nanoparticles after the bound complexes comprising the analyte and probes had formed.

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4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Yang whose telephone number is (571) 272-0826. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nelson Yang
Patent Examiner
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